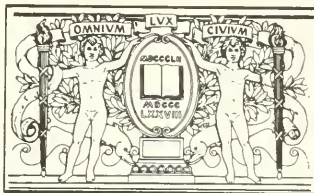


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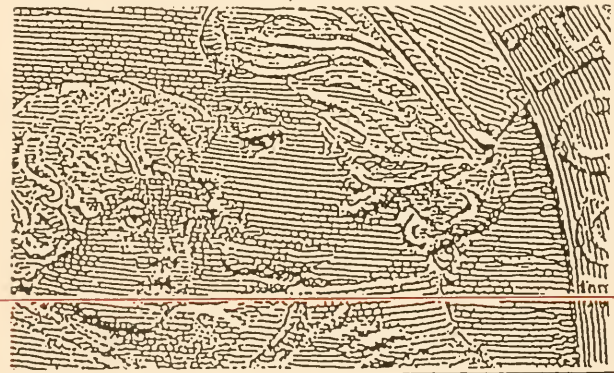
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Children's Medical Center
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5. ACCESS and PARKING

ACCESS and PARKING



The Children's Medical Center has evolved over the past several decades from a small specialized hospital to a large diverse institution for pediatric care. It treats pediatric disorders both on its Main Campus and in other facilities, conducts research to improve practice and extend the frontiers of knowledge, educates future physicians and health care leaders, and operates important public service programs. It gains strength through the synergy among its activities. But in today's increasingly competitive health care environment, Children's not only must continue to offer the finest care, but must do so in a cost-effective way, and it must be accessible to the pediatric population in the region and beyond.

This plan describes how Children's facilities should evolve over the next decade and beyond if it is to maintain its tradition of excellence.



ISSUES AFFECTING CAMPUS DEVELOPMENT



Health care institutions must constantly change, as a result of advances in technology and the practice of medicine, changes in the system for financing medical care, and shifts in the population being served. Over the next two decades, Children's must face a number of key issues and opportunities:

- Pediatric numbers will remain relatively stable in the region over the next 20 years, but their locations will become increasingly bipolar -- largely concentrated in the inner city or dispersed among the more distant suburbs. It will be important to be accessible to both groups.
- Congestion around the Main Campus in the Longwood Medical Area, and the shortage of nearby parking for patients and visitors, are currently serious deterrents to the use of facilities and services offered by Children's.
- Since there are almost no remaining vacant sites on the Main Campus, any future expansion of spaces will necessitate redevelopment or the movement of programs and services to other locations. The amount of possible redevelopment is limited by the growing perception that the area is becoming too dense.



FACILITY DEVELOPMENT STRATEGY

- Occupancy of the new Main Building and construction of the research expansion project will increase by almost one-third the amount of program space available to the Children's Hospital. Renovation of the spaces released by the move into these facilities will assure that the hospital continues to offer the finest diagnostic and treatment services. However, current building programs will add little new space for outpatient clinic activities which are a critical link in the system of care.

- Advances in telecommunications technology will allow the Medical Center to offer its services in a network of locations rather than requiring all patients and physicians to travel to the Main Campus.

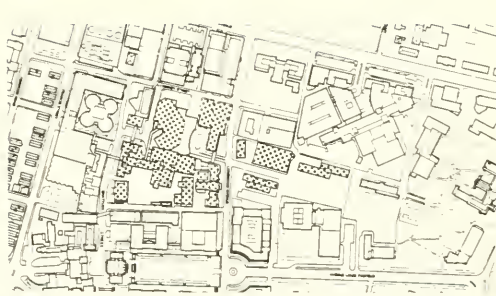
- There will be a continued move in the direction of ambulatory care. Patients requiring routine treatment will be encouraged to obtain it in lower cost care facilities.

- Children's development for investment purposes will need to be better synchronized in the future with its development of health care facilities in terms of planning and development impacts.

The central purpose of the Children's Hospital will continue to be that of providing a level and quality of care that is unavailable in any other institution in the region. However, it will also strive for a better balance between secondary and tertiary care, and seek to increase its base of referrals in order to remain the area's largest pediatric institution.

During the foreseeable future, the pattern of facilities will consist of a strong central presence in the Longwood Medical Area, with special programs in remote locations, and one, possibly several, satellite centers in Boston suburbs. The objective is to create a comprehensive network of facilities for children's care. The facilities will be linked together with a sophisticated data transmission network. Each new facility created will be judged by qualitative criteria -- whether it extends Children's capacity to understand, teach about and care for pediatric disorders.

In order to relieve congestion and make room for future growth of activities on the Main Campus, it will be necessary to further decentralize services and activities to other locations in the Longwood Medical Area. It will also be necessary to move additional staff parking to perimeter locations in the LMA.



MAIN CAMPUS

The Main Campus will remain the major site of inpatient care, biomedical research, teaching and senior management. Outpatient clinical visits requiring specialized diagnostic equipment or multiple specialties will remain largely centered on the Main Campus, although the creation of suburban referral centers and the installation of a communications network will test the degree that diagnostics can be decentralized.

At the center, priority campus development activities will be:

Next 5 years:

Occupancy of the new Main Building for inpatient care.

Renovation and reoccupancy of spaces released by the move into the new Main Building.

Expansion and occupancy of additional research space.

Construction of new parking facilities for approximately 430 cars adjacent to Longwood Avenue, and improvements to circulation in the area. New parking should be connected via weather-protected passageways to the main concentration of buildings south of Longwood Avenue.

Rehabilitation of the Hunnewell building. Acquisition of new outpatient clinic spaces along Longwood Avenue.

Acquisition of additional staff and employee parking spaces within walking range.

5 to 10 years:

Continued upgrading and maintenance of spaces in the main complex.

Renovation of cafeteria and food preparation areas.

Acquisition of new spaces for outpatient clinic uses along Longwood Avenue.

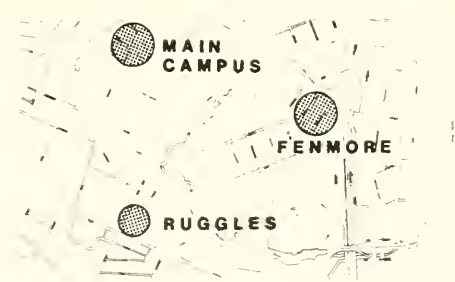
Beyond 10 years:

Redevelopment of the Carnegie and Bader building site for clinical support purposes, possibly in conjunction with acquisition of the Jimmy Fund building, or as a joint effort with Brigham and Woman's Hospital.

Redevelopment of the site of the Hunnewell courtyard and wings as an additional locus for outpatient clinics. New construction should link to both Hunnewell and Fegan and should provide a new public entrance and lobbies.

Possible vertical and horizontal expansion of the new Main Building.

Removal of Enders East (above ground portions) and creation of Children's Place.



OTHER LONGWOOD MEDICAL AREA SITES

A major initiative will be the move of administrative and support divisions which can function at a distance from the Main Campus to less costly spaces in the LMA. These areas will be linked to the main campus by data lines. Spaces will thus be released to the Main Campus for internal expansion of medical programs and for the renovation and re-development of facilities. Another important objective is the consolidation of employee parking into a smaller number of satellite facilities, with bus service to the Main Campus.

Next 5 years:

Move several administrative units and computer equipment and staff to Fenmore as part of decentralization process.

Develop Wentworth site for mixed use development including a significant increase in the number of employee parking spaces on that site.

5 to 10 years:

Further decentralization of administrative and support spaces.

Possible relocation of CCHP to location that is more accessible to mass transit.

Beyond 10 years:

Possible development of additional employee parking spaces in Kenmore Square area as part of mixed use development on lands owned by the Medical Center.



SATELLITE CENTERS

Satellite centers will be initially created as Children's referral centers located strategically in the suburbs. They will avoid the necessity of patients coming to the Longwood site if they do not require access to specialized diagnostic equipment. Over time, however, they can evolve into clusters of activities with the critical mass of people and services that would be important places in their own right.

Next 5 years:

Creation of the first Children's referral center in leased space to prove the concept. The facility needs to be strategically located in the I-95 (Rte 128) to I-495 area, preferably in the northwest sector to be easily reached by the large New Hampshire clientele of Children's.

Addition to the Children's Extended Care Center in Groton to provide education and therapy spaces.

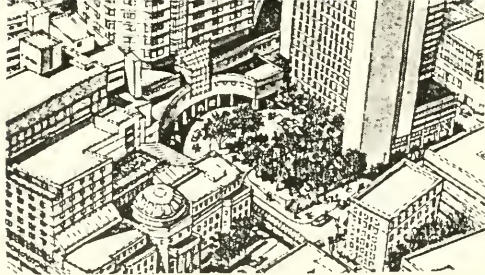
5 to 10 years:

If the initial Children's referral center proves successful, create up to two additional centers in other suburban areas.

Acquisition of a suburban site which is large enough for construction of a dedicated referral center and for the location of several other programs and facilities such as a rehabilitation center or a new extended care facility.

Beyond 10 years:

Construction of first suburban campus for Children's.



CONCEPT PLAN

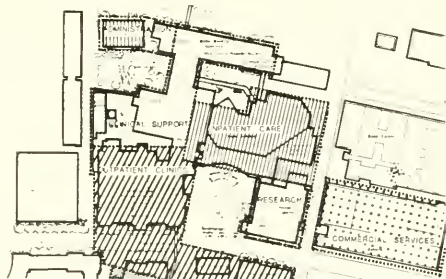
OVERALL PLANNING OBJECTIVES

Like most hospitals, Children's grew by adding buildings incrementally and connecting them as floor heights permitted through passageways and bridges. Hunnewell was its formal "front door" on Longwood, even though the main hospital facilities were for many years concentrated along Blackfan Street. With the completion of the new Main Building, the potential is created for a new kind of presence on Longwood Avenue, through the construction of Children's Place. While it will be some time before resources permit removal of Enders East to open up the forecourt of the new Main Building, it represents an important long term objective for developing the campus.

When the new Main Building and the proposed research expansion are complete, virtually the entire campus will be built upon and future additions (except for vertical and horizontal expansion of Main Building) will require redevelopment of buildings now in active use. Thus it is important to plan investments in structures with an eye to their long term disposition.

The following is a concept for development of the campus over the next 20 years and an image of what the campus will be like if the concept is followed. The proposals will require regular updating as the physical and financial contexts change. While the agenda for the next five years can be stated with some certainty, beyond the ten year mark, proposals are more in the nature of predictions than plans.

- Create a system of sites and facilities that are identifiably part of the Children's Medical Center.
- Continue development of a two-level access system for all buildings on the main campus -- a public "street system" at or near grade connecting all structures routinely used by the general public, including parking facilities; and a "staff access" level route connecting all structures at one level above the public street, to be used by hospital staff and the general public when destined to specific facilities.
- Create new structures which are sensitive to their context, especially the scale and building forms along important streets in the area.
- Reduce congestion on Longwood Avenue and other area streets.
- Minimize the walking distances for patients and visitors.
- Add to the amount of open space that offers visual relief to the built-up character of the area.
- Leave open the possibility of expansion of the Main Campus onto adjacent sites should they become available in the future.



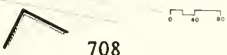
CONCEPT PLAN

The Concept Plan for the main campus of the Children's Medical Center, illustrated on the following page, is designed to:

- establish a new presence on Longwood Avenue through the creation of Children's Place, and a new "point of arrival" for those coming by automobile.
- create sites for long term expansion of outpatient clinics and clinical support buildings linked to current activities.
- enlarge the supply of on-site parking for visitors and patients, and connect the parking via weather protected passageways directly onto the interior "pedestrian street" of the campus.
- enlarge the supply of parking for staff so that nearby spaces can be made available for visitors and patients.
- create a "staff access" level that is continuous and connects the research, outpatient clinics, clinical support, and inpatient clinics, at one level, above the main pedestrian street.
- allow for further extensions of the Main Campus in the future if sites become available, particularly northward onto sites now owned by Harvard, Judge Baker and Emmanuel, and westward onto the Jimmy Fund Building site and the Massachusetts College of Art site.

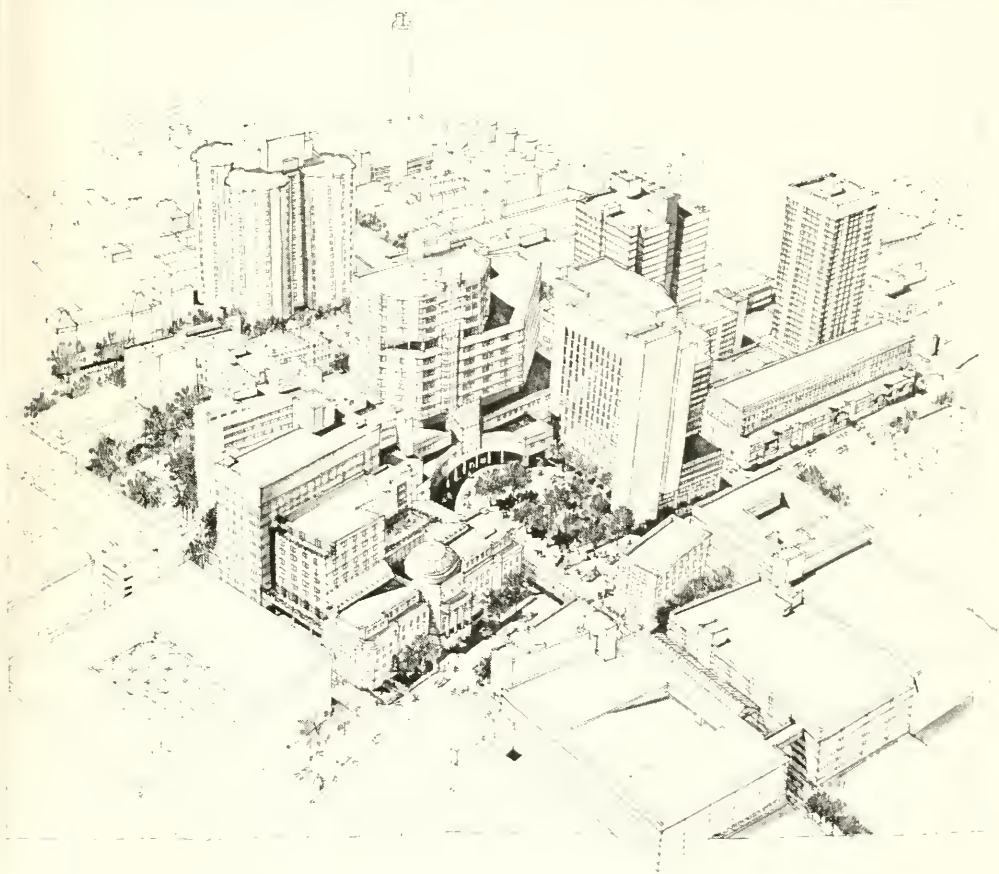


CONCEPT PLAN





CONCEPT PLAN ILLUSTRATION





5 YEAR DEVELOPMENT

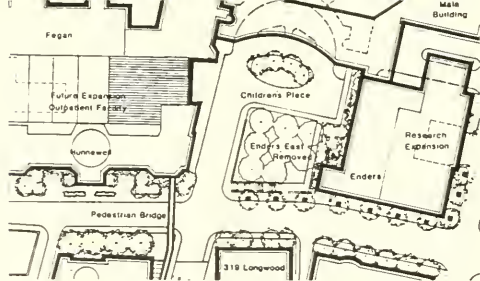
The diagram which follows illustrates the form of the Main Campus in five years if the strategy outlined previously is followed. It incorporates five major initiatives:

- Occupancy of the new Main Building for inpatient care.
- Renovation of the spaces released by the move into the new Main Building, principally for clinical laboratories and programs.
- Construction of the research expansion project, which greatly expands its capacity for carrying out state-of-the-art research.
- Construction of a new parking structure and medical offices on the site of Gardner House, and connection of these above grade via a pedestrian bridge to the structures south of Longwood.
- Construction of a parking deck on the Emmanuel College site recently leased by Children's and Beth Israel, to be used for staff and employee parking.

Not illustrated here are another set of moves that are important to allow this to happen, including: the relocation of service and support spaces to the Fenmore sites; the installation of a new networked information system throughout Children's; and the first steps in creating satellite centers in other locations.



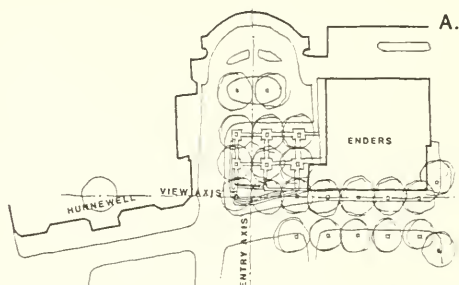




DEVELOPMENT GUIDELINES

Guidelines have been created for new buildings and spaces to ensure that they are consistent with the concept plan and the goals of the Children's Medical Center. Sketches on the following pages illustrate the guidelines. Major issues they cover include the location, physical massing, materials and form of buildings, landscape requirements, and the orientation, views and uses of each individual project.

DIAGRAM A: Bosque of trees organized by major entry axis and visual axis of Longwood Ave., which focuses on Hurnwell. Bend in Longwood provides space at street edge where steps acknowledge entry and transition to the bosque space above.



CHILDREN'S PLACE

Create a comfortable, cheerful, and properly scaled space for and about children and the people who care for them.

DIAGRAM B: Bosque creates a series of rooms within the space that support uses related to children, while also serving as the formal entrance to the Hospital.

ROOMS WITHIN CHILDREN'S PLACE
 A - Child's Pavilion/Playhouse, Steel and Glass
 B - Lawn Play and Sitting Area
 C - Play Equipment/Sand Base
 D - Entry Tower/Hard Pavement
 E - Water Spray/Summer Play
 F - Transition to Street

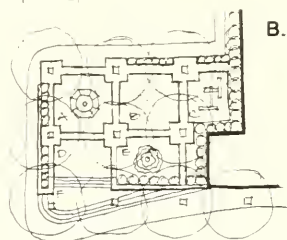
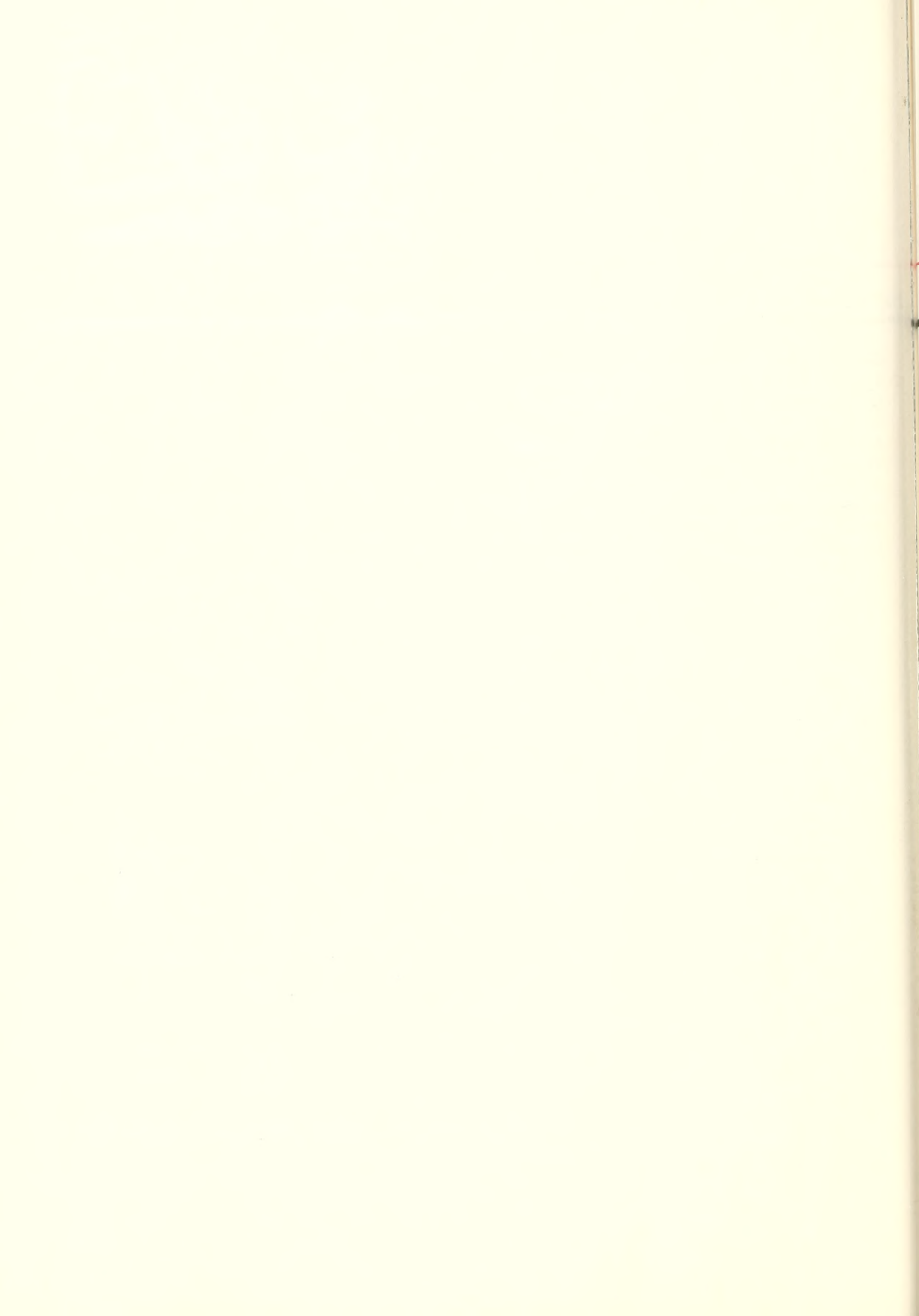
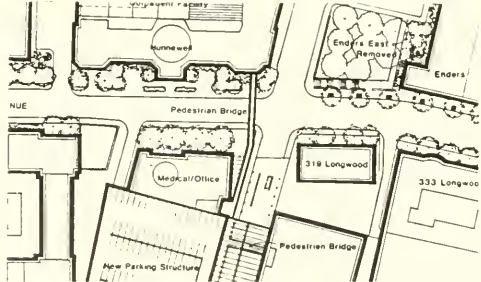


DIAGRAM C: Comfortable, cheerful, and properly scaled space for and about children and the people who care for them.

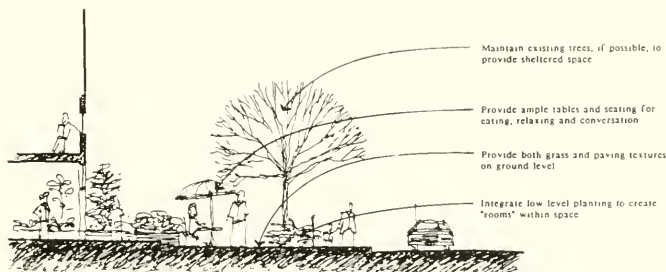
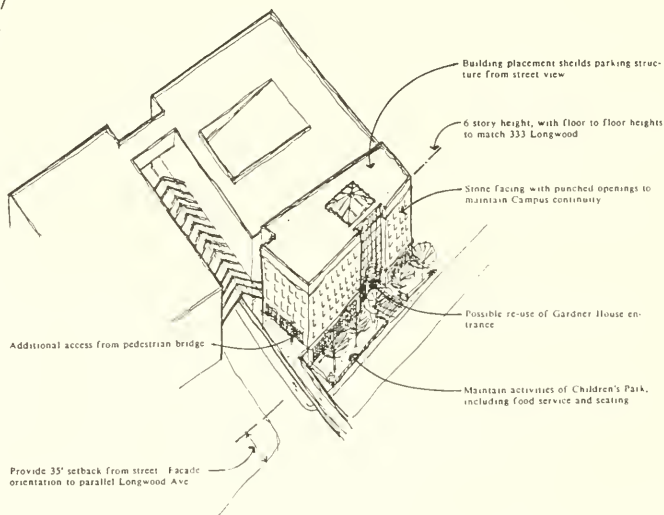




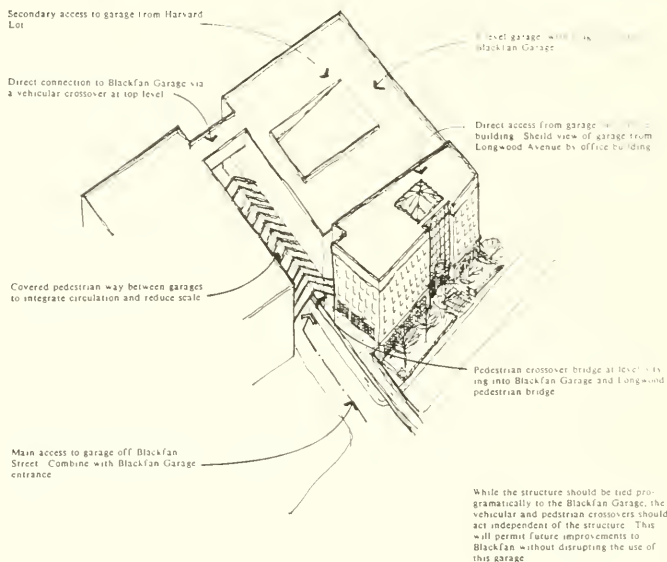


MEDICAL OFFICE BUILDING/ GARAGE/CHILDREN'S PARK

The relief for pedestrians provided by Children's Park will be continued in the new development along Longwood Ave. The food service activities can extend into the ground floor of the office building. A seven level parking garage is linked to the existing garage, and set back from Longwood Ave. A covered arcade spans between them for pedestrian comfort, and allows views to the Main Campus below its transparent roof. Ground level landscaping throughout softens the urban character, and reduces the scale of the projects.

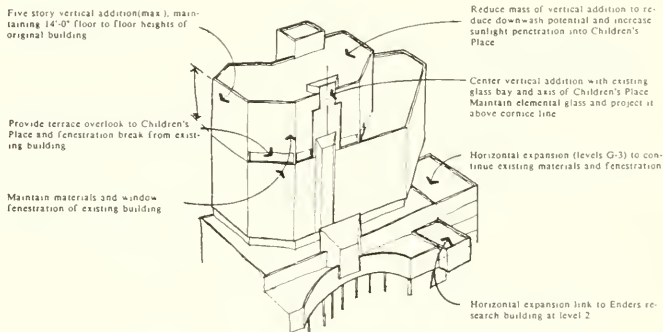




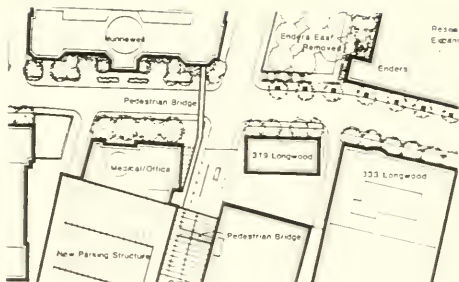


MAIN BUILDING

Five additional stories can be added vertically on the Main Building. These should be centered on the visual axis of Children's Place. Horizontal expansion links the building to Enders, and also expands the first four floors.







PEDESTRIAN BRIDGE

An enclosed pedestrian bridge links Hunnewell with the parking facilities and new office space across Longwood Ave. It should be designed as an extension of the architectural character of the buildings on each side of the street. Places should be provided for pedestrians to stop and wait.

Character should reflect the concept of a link rather than a bridge

Circulation should connect directly into the first level public circulation concept of the hospital

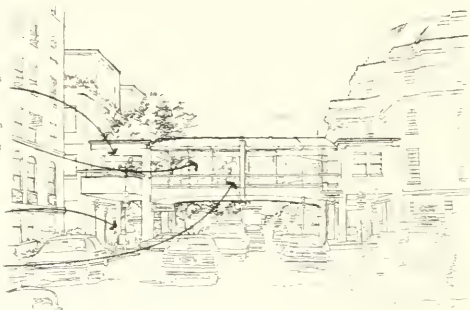
Pedestrian circulation should have places to pause, stop, and sit along the route

Central span element should be lighter in material, address the axis of Longwood Avenue, and permit strong views of street and Hunnewell dome.

Provide spaces to sit and wait in sheltered environment under the bridge, tying in with Children's Park

Night lighting of bridge, from within and from the exterior, should reinforce the light character of the bridge.

Minimum clear headroom should be 14'-6"

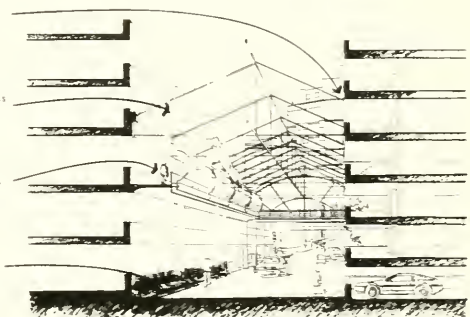


Canopy to remain structurally free from Blackfan Garage

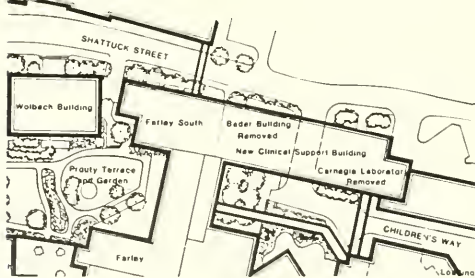
Arcade should be transparent, colorful and reduce the scale of the parking decks to a human size, providing shelter and views to the hospital

Continuous pedestrian link with crossover to Blackfan Garage, thus tying into the public level circulation concept

Provide dense ground level planting to soften and absorb traffic noise







CLINICAL SERVICES BUILDING

A low four story building serves as the Children's entrance off Shattuck Street. Natural light is emphasized throughout. The building's limited height allows daylight to reach the winter garden of the Main Building.

New elevator tower should tie into and be used jointly by the Jimmy Fund building.

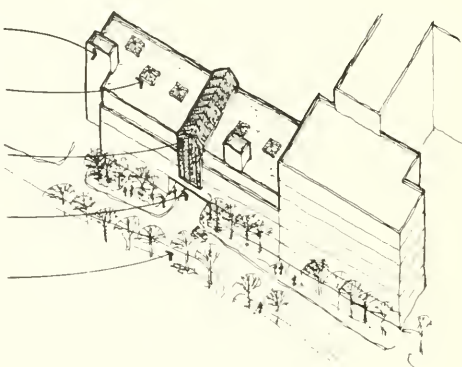
Natural lighting and skylighting are to be encouraged on the facade and on the roof.

Massing of building that spans Children's Way should be light and transparent in quality.

Maintain access for vehicles by spanning Children's Way (14'-0" height).

Reinforce commitment to landscaping Shattuck Street, and provide clear car/pedestrian separation.

Height should be 4 stories, with upper floor stepped back to match height of Wolbach.

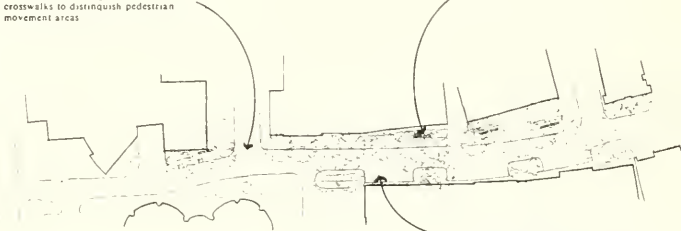


SHATTUCK STREET MALL

The joint development is continued in conjunction with MASCO. Landscape and pedestrian enliven the street, and beautify the south edge of the Children's Main Campus.

Provide brick paving for sidewalk and crosswalks to distinguish pedestrian movement areas.

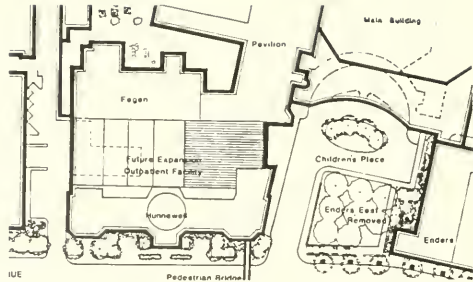
MASCO sitting module (typical)



Interim parking for HMS (eventually to be removed and replaced with shade trees and brick paving).

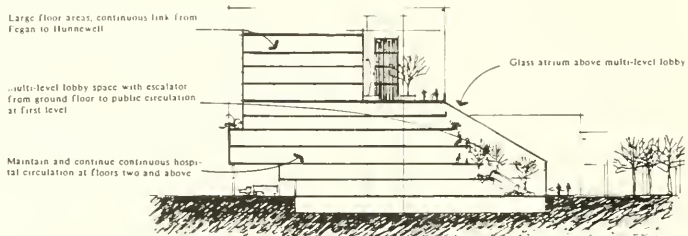
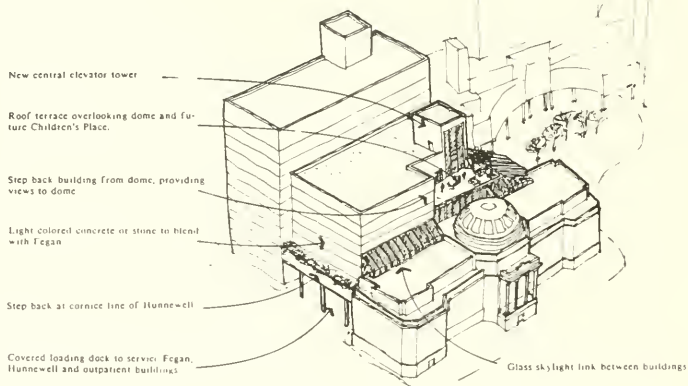
Continue the joint development of Shattuck Mall in conjunction with MASCO guidelines established and agreed to in October 1980. Maintain the amenities provided by MASCO, and increase the landscape and pedestrian elements along the north side of Shattuck Street. Encourage cooperation with adjacent institutions in providing and establishing seating, lighting, and possible vendor activities on the mall; and reduce the amount of vehicular use.





OUTPATIENT CLINIC

Large continuous floor spaces will link Fagan to Hunnewell. The building massing is respectful to both Children's Place and the dome of the Hunnewell Building. A new entrance to the outpatient clinic will be created on Children's Place.





ACCESS AND PARKING

Access and parking are the issues most in need of improvement in Children's physical environment. While the difficulties of getting there and finding parking are most acute for visitors and patients who are less familiar with the Longwood Medical Area, they also serve as negatives in the recruitment of qualified staff. Improvements in this area will have the highest priority.

The existing situation and future needs for parking and access at Children's are in the following three areas:

- Provide sufficient parking for patients and visitors located on the Main Campus. This supply should have direct access to the hospital and minimize the walking distances required.
- Create sufficient parking for staff in nearby areas, with easy and safe access to the Main Campus.
- Consolidate peripheral parking areas under Children's management control.

CURRENT FACILITIES

Current inventory of parking spaces.

<u>On Site</u>	
Blackfan	434
Gardner House	<u>40</u>
	474

<u>Nearby Non Shuttle</u>	
Wolbach	7
Emmanuel College Lot	100
Mass Coll of Art	30
333 Longwood	177
Temple Israel	135
Servicenter	<u>150</u>
	599

<u>Non LMA-Shuttle Service</u>	
Ruggles St.	213
Wentworth	70
Fenmore	81
Beacon St.	170
Allston	<u>15</u>
	549

TOTAL SUPPLY	1622
--------------	------

PARKING DEMAND**FIVE YEAR GROWTH**

Current peak patient and staff parking demand is as follows, occurring at 2 pm on a typical weekday:

Patients and Visitors

Outpatient	267
Emergency Room	32
Patient Visitors	227
Volunteers	27
Business Visitors	<u>89</u>
	642

Turnover Allowance (10%)	<u>64</u>
	706

Staff

Daytime	1110
Evening	<u>289</u>
	1399

TOTAL DEMAND	2105
---------------------	-------------

This demand, adjusted for those who park elsewhere in the LMA (-71), and for second shift staff parking in Blackfan garage (-100), results in a current deficit of 312 spaces.

Over the next five years, increased growth of Childrens' services will require additional parking to accommodate this increased demand. Several assumptions have been made in projecting future needs of Children's over five years.

- A 15% increase in patients and visitors to the new Main Building. This increase reflects the larger availability of beds, and a greater occupancy percentage.

- A corresponding 15% increase in outpatient visits.

- The relocation of 30,000 square feet of Childrens' space from the Main Campus to remote facilities at Fenmore.

- A 3% increase in staff employees.

- A reduction of the staff vacancy rate. Current economic conditions have made the unfilled positions' rate unusually high.

PROJECTED NEEDS

The future demand conditions will create an additional need for parking spaces, above today's shortfall.

Patient and Visitors

Outpatient	+44
Patient Visitors	<u>+38</u>
	+82

The projected patient and visitor demand will be 788 spaces. The available supply on site, less the Harvard/Judge Baker spaces, creates a patient and visitor deficit of 314 spaces.

Staff

Staff increases previously outlined will add 108 spaces to an existing demand of 1399. Loss of the Allston parking area will reduce the available supply by an additional 15 spaces. Some staff currently park in spaces reserved for non Children's leased space at Fenmore, requiring 251 additional spaces. The adjusted supply of spaces for staff leaves a future deficit of 554 spaces.

PROJECTED NEW FACILITIES

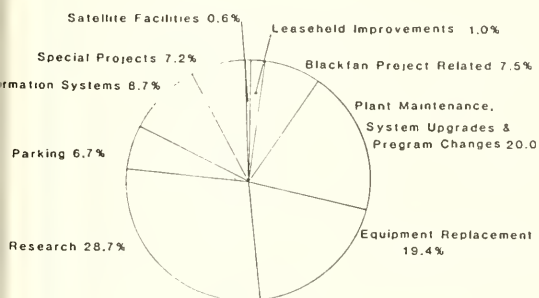
The following strategy will satisfy the current and future shortfall in available parking spaces for Children's needs. It will require 3 major construction projects.

- Construction of a 430 car garage for patients and visitors only, to be located on the Gardner House site.
- Construction of a deck on the Emmanuel College site, adding 100 spaces to Childrens' staff inventory.
- Construction of a facility for 400 more staff spaces as part of a large development on either the Ruggles Street or Beacon Street sites.



CAPITAL EXPENDITURES 1987-1996

Carrying out the master plan will require capital expenditures of \$210 million over the next ten years, an average of more than \$20 million per year. While that is a large figure, it is considered essential if Children's is to maintain its leadership position in pediatric medicine. To do so involves maintaining an orderly growth of facilities, an accessible and modern physical plant and an equipment pool which is not only consistent with current technology but is safe, reliable and adequate to meet growing demands.



The pie chart illustrates the distribution of these expenditures which include:

- The balance of funding for the Main Building project and its related renovations.
- Maintenance investment to satisfy codes and keep existing facilities in good condition and functionally up to date.
- Annual replacement costs to maintain safe, reliable and technologically current equipment.
- Special construction and equipment projects.
- Research costs for the expansion of the research tower and renovation of existing facilities.
- Construction of a new parking garage and a new parking deck for patients and staff.
- Installation of a detailed, integrated hospital information systems to replace existing systems.
- Planning and development of satellite consultation centers.
- Improvements to CMC leasehold properties for decentralization of activities currently on the Main Campus.



ACKNOWLEDGEMENTS

The preceeding is a summary of an ongoing process of masterplanning for the Children's Medical Center by Carr, Lynch Associates of Cambridge,MA.

We wish to recognize the following people for their contribution to creation of the overall plan:

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David A. Bohn
William L. Schwartz



Forecast
Intersection
Level of Service
P.M. Peak Hour

LEGEND: ○ Intersection Level of Service
○ Approach Level of Service
● Deficient Location
⊗ Deficient Location

NOTE: Shading Indicates Deficient Location

NOT TO SCALE

Fig. 2

**NOTE: Shading Indicates
Deficient Location**

Western Mergers Bulletin, Inc.
Consulting Engineers & Planners

Not to Scale

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